



2643

Atty. Dkt. No. 085874-0193

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Neil HARRIS et al.

Title: LOUDSPEAKERS

Appl. No.: 09/435,354

Filing Date: 11/08/1999

Examiner: Suhan Ni

Art Unit: 2643

**REQUEST FOR RECONSIDERATION  
UNDER 37 CFR §1.111**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This communication is responsive to the Non-Final Office Action dated September 7, 2004, concerning the above-referenced patent application.

Claims 1-28 were examined, and are presented for reconsideration. Claims 6 and 9 are indicated to contain allowable subject matter. Claims 1-5, 7, 8, and 10-28 are rejected under 35 U.S.C. §103(a) as unpatentable over Hathaway (US 5,394,478) in view of Kawachi (US 4,811,406). The rejection is respectfully traversed for at least the following reasons.

The Examiner contends that a combination of the teaching of Hathaway with the teaching of Kawachi would yield the subject matter of the sole independent claim 1, namely, "A loudspeaker comprising a phase uncorrelated diffuse sound source and a duct or wave guide coupled to the sound source to direct acoustic energy from the source, the duct or wave guide having a section of substantially uniform cross-section extending from and beyond the vicinity of the sound source and having a termination positioned remotely from the sound source." However, such a combination would not meet all the limitations of claim 1.

Firstly, the contention that Kawachi discloses a phase uncorrelated diffuse sound source is not supported by Kawachi's disclosure. Such a source, known from WO97/09842, which is acknowledged on page 4 of the present application, confers a naturally wide radiation pattern even at high frequencies. In contrast, Kawachi discloses a conventional cone/piston-type of coaxial drive unit. As is well known with such drive units, the acoustic radiation is coherent and non-diffuse, and becomes increasingly directional at high frequencies. The latter problem is solved in Kawachi by means of a simple adjustable bracket for the high frequency drivers that allows them to be angled and thereby better serve the listener at his seated position.

Secondly, Hathaway does not describe a duct or wave guide in the sense of the present application. Reference number 2 in Fig. 5 of Hathaway is an acoustic mass in a tube (see column 5, lines 8 and 9), which forms a lumped-parameter, frequency-tuning element. Fig. 8 and column 5, lines 13-17 of Hathaway disclose an alternative frequency-tuning element comprising a solid plate 12 mounted on a suspension. Both arrangements are well known for designing and tuning the low frequency response of box loudspeakers, as shown in these embodiments. Moreover, the fact that the solid moving plate 12 is equivalent to the acoustic mass 2 confirms that reference number 2 in Fig. 5 is not "a duct or wave guide coupled to the sound source to direct acoustic energy from the source," per the presently claimed invention.

Finally, one of ordinary skill in the art would not have found it obvious to combine the teachings of Hathaway and Kawachi. Such a combination would result in a rather strange device in which the bandpass low frequency filter action of the Hathaway part would remove the mid- and high-frequency sound from the Kawachi compound drive unit, leaving only the output from the Hathaway part. Accordingly, the Kawachi adjustable bracket and the high frequency units mounted on that bracket would serve no purpose. In contrast, the present invention allows wide range sound, including high frequencies, to successfully propagate down a duct, even where the sound wavelength is short compared with the duct dimensions.

Applicant respectfully submits that the application is in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

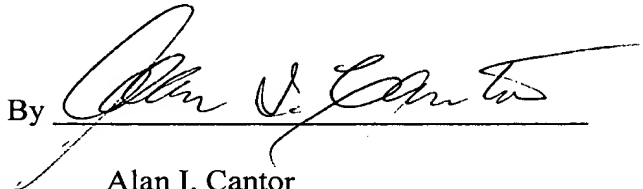
The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date

December 6, 2004

By



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